Tuner's Topics

Expedient Splicing

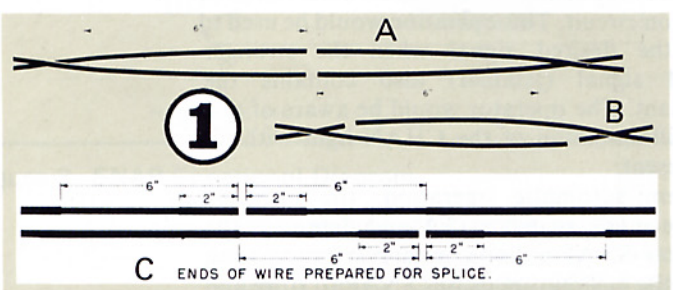
by WO1 Wanda Wig Wag

As you are reading throughout this issue, there are many important aspects to communications in a tactical environment. The location of communications elements, the use of radio frequencies, the potential of fiber optics, the placement of antennas—all may be critical factors in determining the victor on the next battlefield.

While many of these variables are on a rather lofty plane for many Signal soldiers, there is a common thread—or "wire"—that remains significant on the nitty-gritty level. In a tactical environment, the importance of the wire that is used to keep commo centers in touch with other tactical elements cannot be stressed enough. And when there is a break in that wire—usually WD-1—it must be restored quickly.

The expedient method of splicing wire is a technique soldiers in the field should know. Splicing is a method used to join the conductors of field lines to maintain electrical continuity; it can be used to establish conduction (e.g., connecting two lengths of wire) or to repair a line. Expedient splicing, as the name implies, is one of the fastest and most effective methods of doing this.

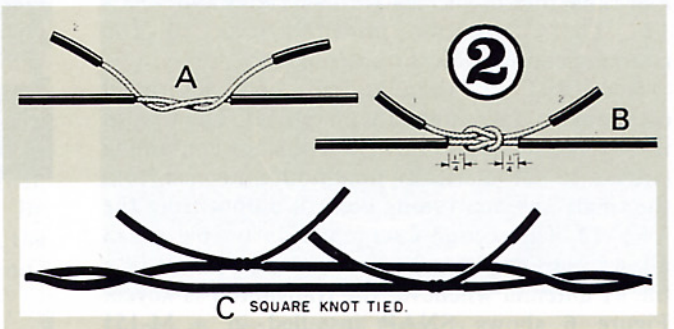
Having the right equipment and know-how is the secret to successful splicing. For WD-1 line, you need a tool (preferably a pair of TL-13-A pliers) to cut the conductor strands and to strip the insulation and you need some friction or electrical insulation tape.



C ENDS OF WIRE PREPARED FOR SPLICE.

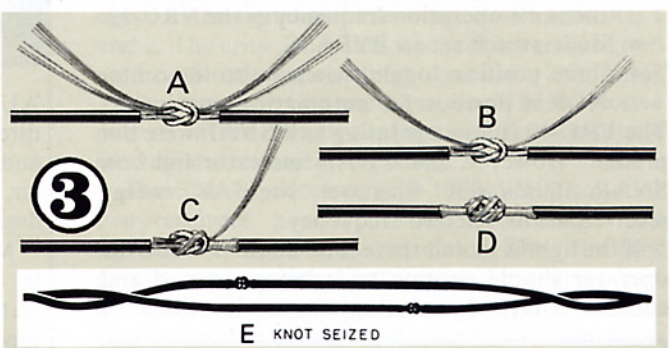
There are four important steps in splicing, according to the expedient method. First, the wires must be cut to stagger their lengths and the insulation must be removed from the conductors. The result should be that the wire pairs should be different lengths and that the exposed conductors for each pair the same length. When removing the insulation, you need to remember that you need about four inches of exposed conductor, and that, in order to follow the second step in splicing by this method, you need at least two inches of insulation *at the ends* of each wire.

The second step is to tie a square knot, joining the long conductor of one pair and the short conductor of the other pair. Approximately one-quarter inch space should be between the knot and the insulated wire. The knot will insure that the spliced area will have the same tensile strength as the rest of the WD-1.



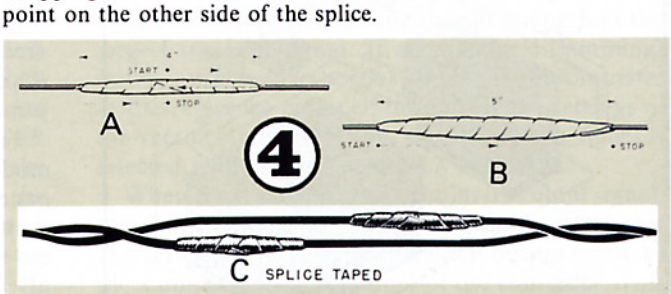
C SQUARE KNOT TIED.

The third step is to seize the knot. This can be done most readily with the copper strands of the conductor. After removing the two-inch insulator "caps" from the ends of the conductor, separate the steel strands, which give the wire strength, from the copper conductor, and cut the steel strands flush with the insulation. Keeping the copper strands together, pull them from one side over the knot and wrap them around the conductor on the other side of the knot with two wraps around the insulated portion. Do the same thing, in reverse, with the copper strands on the other end.



E KNOT SEIZED

The last step is to tape the splice to insulate the conductors and to protect the splice against abrasion and weather. This can be accomplished with either electrical insulation tape or with friction tape. With the former, you start taping in the middle of the knot, going to one side approximately an inch-and-a-half over the insulation, then going back to the other side the same amount, and finally, ending up at the knot itself. With friction tape, start wrapping from about a half-inch over the insulation to the same point on the other side of the splice.



C SPLICE TAPED

Although it isn't the easiest thing to explain, a good splice is relatively easy to do. And, if you are wondering whether your splice is durable, you'll find out—in the middle of the night when it's snowing!